

While the direct product of the quaternion group and any Abelian group of an odd order is always a Hamiltonian group, the direct product of the quaternion group and an Abelian group whose order is divisible by a power of 2 is only Hamiltonian when the latter group contains no operator whose order is divisible 4. This follows directly from the fact that the group generated by the product of an operator of order 4 in the Hamiltonian group and any operator in such an Abelian group must be self-conjugate.

We may determine the number of the quaternion groups that are contained in a Hamiltonian group whose order is divisible by 2^a without being divisible by 2^{a+1} in the following manner. Such a group contains a single subgroup¹ of order 2^a . This subgroup includes 3 times 2^{a-2} operators of order 4. Each quaternion subgroup includes two of the operators of order 4 that are included in a subgroup of order 2^{a-1} which involves only 2^{a-3} operators of order 4. Hence *there are 2^{2a-6} quaternion subgroups in the given Hamiltonian group.* All of these have the commutator subgroup of the entire group in common. In other words, the commutator subgroup of a Hamiltonian group is the same as that of any one of its quaternion subgroups.

CORNELL UNIVERSITY, June, 1898.

Stated Meeting, October 21, 1898.

Vice-President SELLERS in the Chair.

Present, 12 members.

Prof. Lighter Witmer, a newly elected member, was presented to the Chair, and took his seat.

The minutes of the last stated meeting were read and approved.

Dr. Frazer read a letter from the International Geological Congress in regard to the establishment of an international floating institute, and offered the following resolution:

Resolved, That the President of the Society be requested to memorialize Congress in favor of an appropriation in aid of the in-

¹ Sylow, *Mathematische Annalen*, 1872, Vol. v, p. 584.

vestigations proposed at the meeting of the International Geological Congress held at St. Petersburg, Russia, in August, 1897, and that the President be requested to communicate to the Secretary of State what had been done at the St. Petersburg Congress in respect of establishing an international floating institute for the purposes named in the action of that Congress, and to request the Secretary of State to bring the subject to the attention of the proper committees of Congress.

which resolution, on his motion, was referred to the Officers and Council.

The Librarian presented a list of the donations to the Library, and called special attention to a valuable gift from Mr. Henry Pettit, of five volumes of contemporaneous clippings, illustrating the day-to-day history of the Hispano-American War; and of two volumes of *L'Illustration*, July, 1870–July, 1871, being the numbers issued in Paris during the Commune.

Mr. Pettit, by invitation, made some interesting remarks in connection with this donation.

Announcement was made of the decease of Prof. Gabriel de Mortillet, of St. Germain-en-Laye, France, who was elected to membership on February 15, 1895.

Prof. Albert H. Smyth read a paper on "Thomas Moore in Philadelphia," which was discussed by Messrs. Dickson and Wood.

A paper by Dr. Daniel G. Brinton was presented on "Two Unclassified Recent Vocabularies from South America."

Pending nominations for membership Nos. 1432, 1464, 1469, 1470, 1471, 1472, and new nominations Nos. 1473 and 1474 were read.

The rough minutes were read, and the Society was adjourned by the presiding officer.